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Institutionalised elderly people in Catalonia: How many are they and how are they?

Pilar Zueras Castillo*
Centre d'Estudis Demogràfics

Marc Ajenjo i Cosp
Centre d'Estudis Demogràfics

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Abstract

The institutionalised population aged 65 and over in Catalonia has been on the constant upswing in recent decades because of both improved survival and the expansion of institutionalisation. Although in relative terms it only comprised 4% of population aged 65 and over in 2011, its prevalence increases dramatically beyond age 80. Because this population is systematically not taken into account in surveys addressed to the population living in households, nor is it used in sociological analyses, it is essential to ascertain its composition in order to correct biases.

We use data for Catalonia from the last four editions of the census (1981, 1991, 2001 and 2011) with a twofold objective: to quantify the population aged 65 or older not living in private households in Catalonia and to study its evolution during the last three decades. To complement this data, we analyse the Health Survey of the Institutionalized Population in Catalonia (ESPI, 2006) with the aim of developing a profile of the population living in residential care facilities. People living in institutions cannot be considered homogeneous, although there is a high presence of very old women. A large share of them fits the profile of widows over the age of 80, with low education and income levels, who previously lived alone and are dependent for functional activity or have deteriorated mental health, and who state that they entered the institution because of issues related to health or autonomy. However, a cluster analysis has identified other groups that show quite different situations. These results reveal the importance not only of deteriorating health in the process of institutionalisation but also the presence or absence of a family network, which is an important resource in dealing with the ageing process at home, because of either the need for assistance or the company and wellbeing it can provide.

* Contact address: Pilar Zueras. Centre d'Estudis Demogràfics, Universitat Autònoma de Barcelona. Campus de la UAB. 08193 Bellaterra, EU. E-mail: pzueras@ced.uab.es.

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1. Introduction

We know little about the institutionalised population in Spain in general and in Catalonia in particular, first, because surveys are generally taken of population samples living in private homes, and secondly because censuses gather very little information on this population, hindering an in-depth analysis. Likewise, the fact that they constitute a small share of the total population contributes to their invisibility. According to the last round of censuses from 2011 (Eurostat, 2017), in the European countries where this residential option is more common – Ireland, Holland, Sweden, France and Belgium – 14% of people aged 80 and over is institutionalised. Broadly speaking, in other countries in northern and western Europe, this percentage stands at around 10%, while it is around 8% for Eastern European countries, and its lowest prevalence is in Mediterranean countries (5% in Spain). According to data from the National Statistical Institute (INE) for the same period and ages, institutionalisation in Catalonia is slightly above the Spanish mean but below the mean found in other autonomous communities such as the two Castiles, Aragon, Navarra and Madrid.

This article aims to shed light on this population in Catalonia. It should be borne in mind that studies on the ageing of the population and the elderly are becoming more common in the social and healthcare fields, and though the prevalence of institutionalisation is quite low for the population as a whole, it increases steeply at the oldest ages. What is more, all signs point to the fact that in recent years there has been an increase in this population, which makes it even more important to ascertain its characteristics to both correct this bias to the extent possible and to plan social and healthcare services.

This twofold facet, qualitative and quantitative, is at the core of this article's objectives, as it strives to observe the evolution in the past three decades as well as to quantify and describe the population over the age of 65 institutionalised in Catalonia. Even though much of the research has been carried out based on census data – from 1981 until 2011 – we also used the 2006 Health Survey of the Institutionalized Population in Catalonia (ESPI), which is targeted at individuals aged 65 and older living in residences or long-term residential centres.

2. Background

The notable increase in the proportion of people aged 65 and older and the increasing share of individuals over the age of 80, the outcome of improvements in life expectancy and the decrease in the fertility rate, has sparked a great deal of sociological research on the elderly, which is often exclusively focused on people living in private homes. This, however, can give rise to biases because it does not include the institutionalised population (Peeters, Debels & Verpoorten, 2013).

In Catalonia, the number of people living in collective residences is only tallied every ten years as part of the census taken all over Spain. As the censuses show, these residences are varied in nature, from religious centres, hostels or pensions to centres that provide care like hospitals, long-term centres or residences. Likewise, few surveys have been conducted targeted at the population living in group homes, and those that have been conducted have focused exclusively on long-term centres or residences, that is, care-providing institutions.[1]

Senior citizens living in residences is an option that is not widely accepted in Spain, especially compared to in other European countries (Fernández Carro, 2013; Eurostat, 2017). Sixty-eight percent of Spanish citizens over the age of 65 prefer to be cared for by their families in case of need, while in Norway this figure is just 18%. Furthermore, 50% believe that the family is responsible for providing them economic support, either totally or along with the State, and 68% believe the same with regard to providing the elderly with personal care. In contrast, in Norway only 22% assign these responsibilities to the family (Bazo, 2004).

When we analyse the reasons people enter residences, b deterioration in their health and death of their spouse are the most common reasons; the rupture of family relations because of conflict or the fact that the residence offers care at an affordable price are other reasons cited (Bazo, 1991). However, according to the ECVMR, the most often-cited reason for entering a residence – not a long-term hospital centre – is the desire for company (34.5%), followed by a deterioration in health or loss of functional autonomy (25.7%) and family reasons (22.2%), among other reasons (Pérez Ortiz, 2005).

Previous studies reveal that going to live in a residence or long-term assisted care centre is the outcome not only of physical or mental dependency but also of the lack of a family network capable of providing the elderly person with the care and support that allows them to maintain their residential autonomy (Freedman, 1996; Grundy & Jital, 2007). In this sense, several studies have stressed the role of the available family network (partner, children, grandchildren, etc.). Thus, becoming widowed seems to be an event that prompts institutionalisation, especially for men who lose their partners at an advanced age (Pérez Ortiz, 2005). The care needs of the elderly are often provided by family members via residential proximity or cohabitation (Renaut, 2001). Even in the case of severe health deterioration which lowers the elderly person's autonomy, having a partner and children makes it more likely for them to remain living in their own home (Désesquelles & Brouard, 2003). Likewise, grandchildren are an important factor in the family network that lowers the risk of institutionalisation, which leads us to believe that the presence of grandchildren strengthens the bonds between elderly parents and their adult children (Renaut, 2001).

[1] Spain-wide, in 2004 the *Observatory of the Elderly* administered the *Survey of Living Conditions of the Elderly in Residences* (ECVMR); while in 2008 the INE administered the *Survey on Disabilities, Personal Autonomy and Situations of Dependency* in two versions, one targeted to households and the other targeted to centres. Likewise, in 2006 the Department of Health of the Generalitat administered the *Survey of Health of the Institutionalised Population in Catalonia*.

The data were analysed bearing in mind the two aforementioned dimensions: state of health and family network. In state of health, we considered both physical dependency, measured in dependency in basic daily life activities (BDLAs), and mental dependency, considering mild cognitive deficits and dementia. Regarding family networks, we considered marital status as an indicator of the network developed during the life cycle, as well as the presence of a partner, children and other family members in the household. We also analysed other variables which provide information on events in the early years of life and in adulthood and are related to the biographical arcs and forms of cohabitation in old age: educational level attained, participation in the job market, home ownership or rental, and previous situations of cohabitation (George & Hays, 2002).

3. Sources and methodology

The most common definition of the institutionalised population is directly associated with their place of residence: collective establishments. In this article, we use the term "institutionalised population" to refer to the population that lives in these establishments, without necessarily assuming that the person who is "institutionalised" played a passive role in deciding to live there.

To estimate the number of institutionalised persons, we used the Spanish censuses for the Autonomous Community of Catalonia from the years 1981, 1991, 2001 and 2011. We worked with the micro-data form the 1981 census provided by the INE, which correspond to a sample of 25% of the family homes and the total population living in collective establishments. For the 1991, 2002 and 2011 censuses, we obtained the data from the detailed results available on the INE's website (www.ine.es).

Broadly speaking, we should distinguish between two kinds of institutionalisation: the kind related to the ageing process, which can be motivated by the deterioration of health, fragility, solitude or a combination of factors associated with ageing; and the kind more closely tied to the residents' life course (religious, military, etc.). We use the term *assisted care centres* to speak of the former, which include both residences like hospital centres, and *non-caregiving centres* to refer to those which have been grouped into the category of religious and others.[2]

Initially, we performed a descriptive analysis of the institutionalised population aged 65 and older considering the variables of sex, age and marital status, and later we focused on the collective which interested us the most, residents of *assisted care centres*.

We should particularly mention the 2001 census, which does not report on this population's marital status. Apart from this problem, which leads to a break in the series, this tally seriously underestimates the number of people living in collective establishments and especially in senior citizen centres. For example, in Catalonia there were 43,945 places available in senior citizen homes

[2] The diversity of collective establishments has not always been handled the same way in the census tallies. In order to standardise the information, they have been categorised into four groups, two of them that provide care – residence and hospitals - and two of them that do not provide care – religious and others (Appendix 1).

in January 2001, while according to the census there were only 24,199 people this age living in all the collective establishments (Díaz et al., 2009).

This circumstance means that we partly did without the 2001 census, so we only show the data to illustrate the incongruence or when we have described the characteristics by age and sex, not marital status, because nothing leads us to believe that the underestimate seriously biases these two factors.

The analysis was complemented with data from the *Health Survey of the Institutionalised Population* carried out by the Department of Health of the Generalitat de Catalunya and administered to the population aged 65 and older who lives in assisted care centres, within which it distinguishes between residences and long-term centres with more than 15 places.[3] The final sample was comprised of 1,379 people, 1,042 of whom live in residences and 337 in long-term centres. Of all the interviewees, 674 were interviewed via an indirect questionnaire with the main caregiver because the person chosen was unable to respond (Department of Health, 2006).

To further explore the population living in assisted care centres, we examined both their sociodemographic profile and the profiles that reflect their personal situation. In this sense, even though many of the individuals who enter residences do so based on care needs due to physical or mental deterioration, we expect the effect of the family network or cohabitation situation prior to the entry to also bear an influence. In short, although the worsening of health status determines the forms of cohabitation as long as the family network can come up with alternatives to residential care, the absence of a family network may promote entry into an assisted care centre even when there are no major healthcare needs.

In order to examine the different casuistics and find the characteristic features of the residents of assisted care centres, we thought it would be worthwhile to generate categories with profiles that were as homogeneous as possible. To do so, we used the variables sex, age, health (degree of dependency in basic everyday activities and mental health), age at the time of entry, reason for entry, cohabitation prior to entry, type of home and some indicator on the family network (having a partner, children and other family members or not). Since these are nominal or ordinal variables, we first performed a multiple correspondence analysis (MCA), which allowed us to summarise all the variables into a smaller number of quantitative factors. Based on this analysis, we retained eight dimensions which accounted for 64.1% of the inertia,[4] which were used to carry out a hierarchical conglomerate analysis in which all the individuals in the sample were divided into seven categories.[5] Later, we

[3] For complete information on the survey, see:

http://salutweb.gencat.cat/ca/el_departament/estadistiques_sanitaries/enquestes/enquesta_poblacioinstitucionalitzada_catalunya/

[4] The criterion for determining the number of dimensions was to retain the minimum number of factors which had a Cronbach's alpha no lower than 0.8 after a reliability analysis (Navarro et al., 2004).

[5] Several tests were conducted based on diverse analyses of non-hierarchical conglomerates, and the characteristics of the resulting groups were analysed. The fact that some clusters appear repeatedly in some of the results was one of the criteria for establishing the definitive number of classes.

examined the distribution of these variables within the group, as well as other variables considered to be of interest: marital status, usual place of residence, educational level attained, having participated in the job market and income level. This methodology has previously been used by Désesquelles and Brouard (2003).

4. Results

4.1. Evolution of the institutionalised population in Catalonia

4.1.1. Evolution and structure by sex and age of the institutionalised population

Since 1981, the institutionalised population age 65 and older has not stopped growing. As a whole, from 1981 to 1991 it increased 50%, while if we only consider individuals aged 75 and older it has almost doubled. Even though the proportions by sex and age only rose slightly as a result of the ageing of the population as a whole, the strong expansion in both the institutionalised population and the number of senior citizen residences in these years is unquestionable: from 1979 to 1988 the number of residences in Barcelona multiplied by three, going from 64 to 208 (Barenys, 1992).

As mentioned above, the 2001 data were significantly under-recorded. If we omit the information from this year, we can conclude that the increase that occurred in the 1980s has continued unabated until now: according to the 2011 census, there are 51,299 people aged 65 and older who are institutionalised, more than double the number in 1991 (Table 1). Similar to what happened in the 1980s, part of this increase can be attributed to the evolution of the elderly as a whole in Catalonia, such that the prevalence did not rise as steeply as the numbers, from 2.8% in 1991 to 4.0% twenty years later.

This increase has been accompanied by a major change in the age structure of the institutionalised population (Graph 1). The pyramids first show the heavy female component of this group, and secondly the important ageing process, especially among women, which in 2011 prevails in individuals age 80 and older.

Table 1. Evolution of the institutionalised population Catalonia by sex and age. Catalonia 1981-2011

		1981		1991		2001		2011	
		Men	Women	Men	Women	Men	Women	Men	Women
65 and older	Total	3,917	11,348	5,973	17,756	5,946	18,225	13,504	37,795
	Prevalence	1.5%	2.9%	1.7%	3.5%	1.3%	2.8%	2.5%	5.0%
	Mean age	76.8	77.7	78.3	80.2	79.4	82.7	82.4	85.6
75 and older	Total	2,241	7,103	3,830	13,151	3,965	14,827	10,981	34,696
	Prevalence	2.5%	4.5%	3.0%	5.8%	2.2%	4.8%	4.2%	8.2%
	Mean age	81.6	82.1	82.9	83.6	83.9	85.4	85.2	86.9

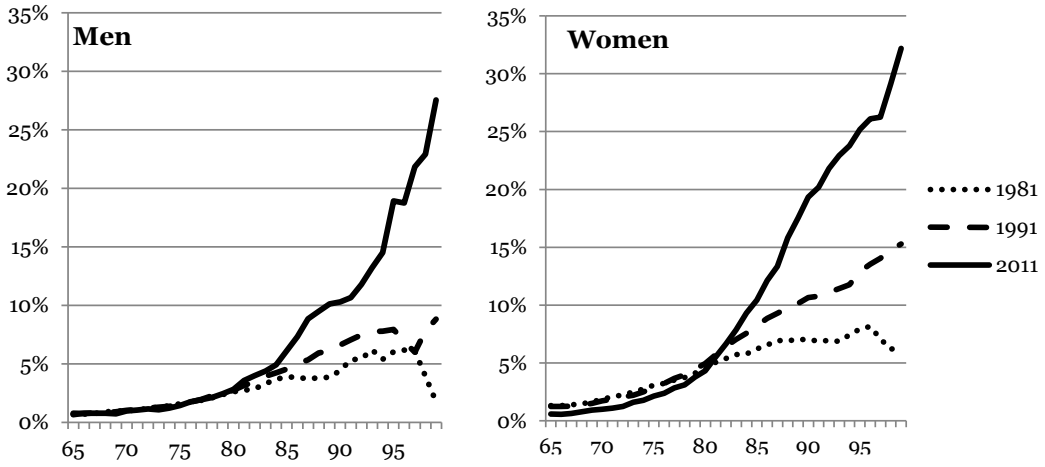
Source: Authors based on figures from the INE: Microdata (1981) and detailed results (1991, 2001 and 2011)

Graph 1. Structure of the institutionalised population by sex and age. Catalonia 1981-2011

Source: Authors based on figures from the INE: Microdata (1981) and detailed results (1991, 2001 and 2011)

Changes between periods in the prevalence of institutionalisation by sex and age (Graph 2) show that between 1981 and 1991, the increase came exclusively over the age of 80 for both men and women. Even though the pattern in recent years is similar, we can see a more important cut-off at the same age. Until the age of 80, the prevalence for men has not changed, while for women it has even experienced a slight drop. After this age, however, the prevalence rises spectacularly, with increases of more than 100% at the most advanced ages. The steady figures, and even slight drop, in the prevalence in the under-80 population may be explained by two complementary factors. On the one hand, the improvement in survival postpones the time of widowhood, and it has been shown that living as a couple facilitates residential independence even in situations of deteriorating health (Désesquelles & Brouard, 2003; Festy & Rychtarikova, 2008; Zueras & Ajenjo, 2010). Likewise, improvements in the living conditions of the elderly, in terms of both their health status and material wellbeing, make it possible for them to live at home even when their partner is no longer with them (Zueras & Miret, 2013), thus increasing the proportion of elderly people who live alone. What is more, the increase in institutionalisation after the age of 80 seen in 2011 may be due to a lower survival rate of more traditional forms of intergenerational cohabitation among the members of the more recent cohorts who are reaching old age (Zueras, 2014).

Graph 2. Prevalence of institutionalisation by sex and age. Catalonia (1981, 1991 and 2011)



All the curves were softened using the mobile means of three ages.

Source: Authors based on figures from the INE: microdata (1981) and detailed results (1991 and 2011)

4.1.2. Marital status of the institutionalised population by sex and age

For both men and women, in all three periods analysed, the predominance of single persons and widows among the institutionalised population is counterbalanced at different ages (Graph 3).

The high presence of single persons, which is especially noteworthy at the younger ages, is the outcome of a clear over-representation of single persons in the institutionalised population, in that in the population as a whole over the age of 64 the proportion of single persons is approximately from 6% to 11% for men and women, respectively. However, the proportion of single persons lowers at more advanced ages in favour of the rise in widows and widowers, who become the clear majority by age 85 and above.

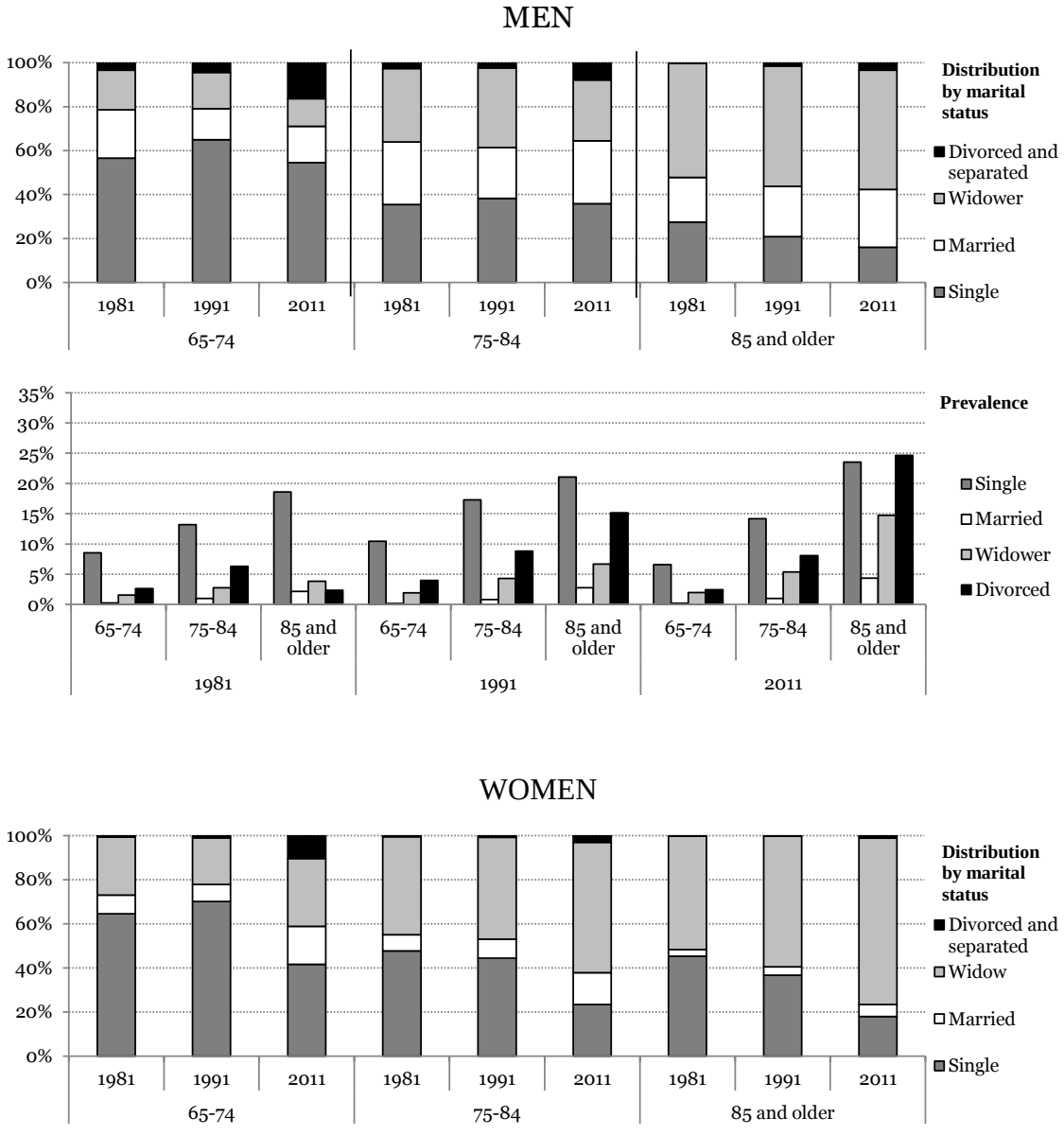
Even though divorced or separated persons are in the minority, their evolution is showing a clear upswing, especially among the younger age groups: in 2011, 16% of men and 10% of women aged 65 to 74 were divorced or separated, a figure that in 1991 was practically negligible. Regarding married persons, especially men, there is significant stability at all ages and in all three periods. This stability is lower in women, as the number of married women drops after a certain age because of their partners' lower life expectancy.

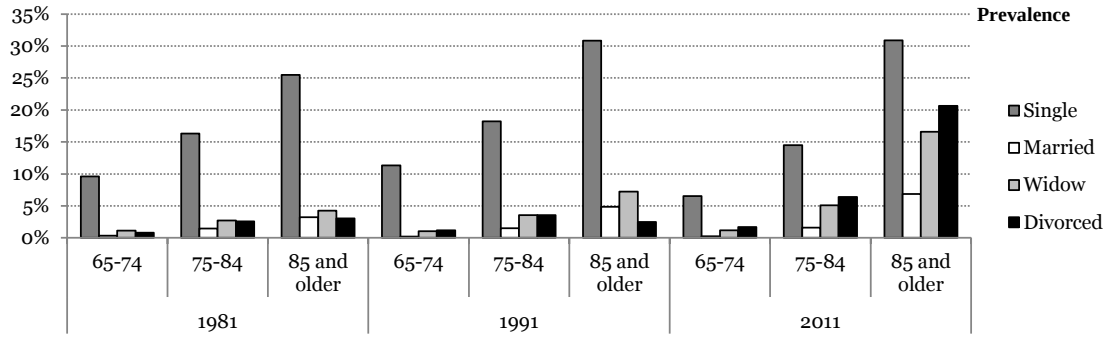
Regarding the prevalence of institutionalisation, the results are quite clear. For married persons, for example, the prevalence is quite low, with some increase in the most recent period and for the older ages, and a slightly higher figure for women. The group that shows the highest prevalence is single persons, which increase significantly with age, most importantly among women: in 2011, 31% of single men and 45% of single women aged 85 or older lived in a collective establishment. We can assume that this phenomenon is directly associated with age or the ageing process, such as deterioration in health or solitude because of the loss of family members.

Regarding widows and widowers, we should highlight the fact that their presence increases with age, especially at the most advanced ages, and that there are slightly more widows than widowers. Thus, in 2011, the figures in the oldest age bracket are close to that of single persons. Even though the number of separated or divorced persons is quite small, especially at the oldest ages, it is one of the groups that has increased the most: their prevalence is now higher than widows and even than single men at the oldest ages.

Generally speaking, we can see that among persons aged 85 or less, the prevalence of institutionalisation has been quite stable since 1981. However, at the most advanced ages there has been a steep increase among both men and women for all marital statuses; this spike could be seen in 1991 but became quite noticeable by 2011.

Graph 3. Marital status of the institutionalised population by sex and age. Distribution and prevalence. Catalonia, 1981, 1991 and 2011





Source: Authors based on figures from the INE: Microdata (1981) and detailed results (1991 and 2011).

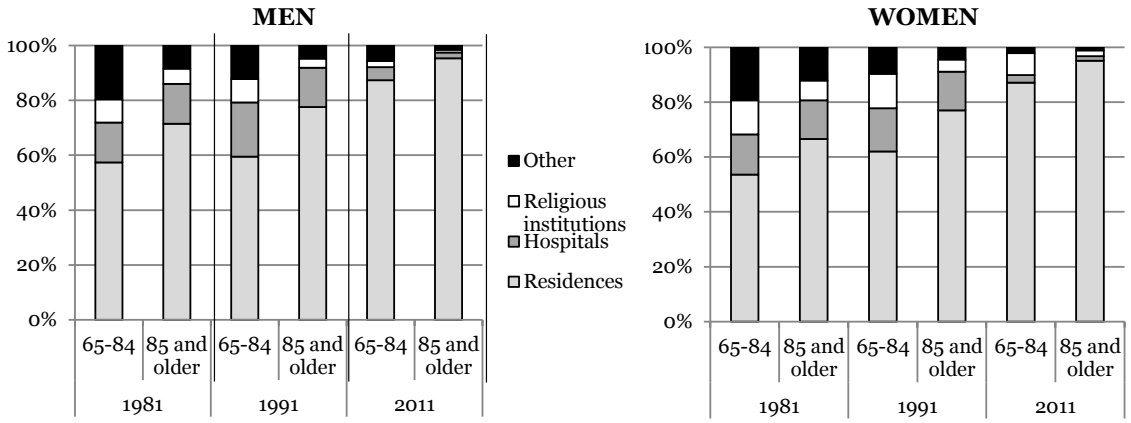
4.1.3. Type of collective establishment of the institutionalised population by sex and age

The vast majority of individuals aged 65 and older who live in collective establishments reside in assisted care centres, either residences or hospitals (Graph 4). Specifically, for any age group, more than half the men and women live in residences, between 10% and 20% in hospital centres, while less than 10% of men and 15% of women live in religious institutions.

As expected, the proportion of people who live in non-caregiving centres drops in the oldest age groups, while the proportion living in hospitals or residences rises; this is associated with the changes inherent in ageing. Between 1981 and 2011, there was a clear increase in the number of residents of assisted care centres, especially among those aged 85 or older, until currently only 5.6% of the institutionalised men and 6.2% of the institutionalised women do not live in an assisted care centres. These values in 1981 were 26% and 30%, respectively. This evolution is also determined by the virtual disappearance of those who state that they live in a religious centre.

Along the same lines is the prevalence analysed by type of centre (Graph 5). Thus, compared to the entire population, virtually no senior citizens live in non-caregiving centres, to such an extent that in 2011 they accounted for less than 0.5% of the total population in almost all age groups studied. On the other hand, that same year, more than 20% of the oldest women lived in assisted care centres.

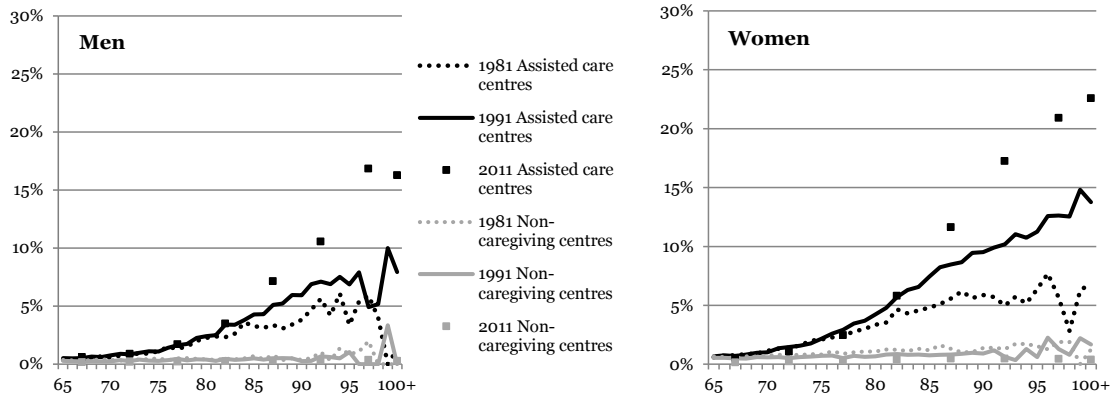
Graph 4. Institutionalised population by age group and type of collective establishment. Catalonia, 1981, 1991 and 2011



Note: For 2011, estimates were made by sex and age group based on the data available for Spain, assuming equal distribution by type of centre in Catalonia.

Source: Authors based on figures from the INE: Microdata (1981) and detailed results (1991 and 2011).

Graph 5. Prevalence of institutionalisation by sex and age according to type of collective establishment. Catalonia, 1981, 1991 and 2011



Note: For 2011, estimates were made by sex and five-year age group based on the data available for Spain, assuming equal distribution by type of centre in Catalonia.

Source: Authors based on figures from the INE: Microdata (1981) and detailed results (1991 and 2011).

4.2. The population living in assisted care centres in Catalonia (2006)

4.2.1. How many are there and what are they like?

The estimate made by the Health Survey of the Institutionalised Population (ESPI)[6] is 34,545 people over the age of 65 living in assisted care centres in

[6] It should be borne in mind that this population is only part of the population living in collective establishments and therefore it is not exactly equivalent to the population considered in the censuses. The population examined by the ESPI is those living a long-term centres and residences, which approximately corresponds to the population which we previously categorised

Catalonia in 2006, an estimate which matches the figures from the 1991 and 2011 censuses and reflects the steady rise of this population.

As we have seen, this increase can be partly attributed to the ageing of the population as a whole, as well as by the increase in the prevalence of institutionalisation.

Table 2. Population living in assisted care centres. Catalonia, 1981, 1991, 2006 and 2011

		65 and older			75 and older		
		Total	Prevalence	Mean age	Total	Prevalence	Mean age
1981	Men	2,887	1.1%	77.7	1,830	2.0%	81.9
	Women	7,972	2.0%	78.6	5,390	3.5%	82.3
	Total	10,859	1.6%	78.3	7,220	2.9%	82.2
1991	Men	4,892	1.4%	79.1	3,351	2.8%	83.2
	Women	14,463	2.8%	81.1	11,449	5.2%	83.8
	Total	19,355	2.2%	80.6	14,800	4.4%	83.7
2006	Men	9,684	2.0%	81.3	7,435	3.5%	84.5
	Women	24,861	3.6%	85.0	22,597	6.3%	86.4
	Total	34,545	2.9%	84.0	30,032	5.2%	85.9
2011*	Men	12,381	2.2%	82.9	10,356	3.9%	85.4
	Women	35,491	4.6%	85.9	32,991	7.4%	87.1
	Total	47,872	3.6%	85.2	43,347	6.1%	86.7

* For 2011, estimates were made by sex and age based on the figures available for Spain and assuming equal distribution by type of centre in Catalonia.

Source: Authors based on figures from the IDESCAT (2006) and the INE (1981, 1991 and 2011).

The ESPI report describes the characteristics of the population living in assisted care centres. Broadly speaking, it is primarily comprised of widows aged 80 or older with a primary education and income lower than 600 euros per month. The institutionalised population has an older structure than the population of these ages, and we can detect an over-representation of women, especially those aged 80 and older: the mean age is 84.0 and 72% are women, while in the general population aged 65 and older the mean age is 75.8 and women account for 58% of the total. The majority are widows (62.2%), with a higher proportion among the older age groups. Single people account for 18.3% of the institutionalised population, with differences between men and women, since the proportion of men is higher in the younger age groups, while for women it is the opposite (Department of Health, 2010).

The main reason cited for going to live in an assisted care centre is problems with health or autonomy, reasons which were cited by 57.9% of the

as living in assisted-care centres. Although this population only accounted for 71% of the total institutionalised population in 1981, by 2011 this figure was 94%.

interviewees. Regardless of their marital status, a large number of interviewees, 36.3%, lived alone before entering the centre, while 31.1% lived in the homes of close family members and 19.1% lived with their partner. However, the population living in long-term centres, compared to the population living in residences, more often comes from social-health or hospital centres and cite health and autonomy problems as the main reason for their entry, while those living in residences more often cite family reasons or company. Likewise, a higher proportion of the residents of long-term centres are married and lived with their partner or close family members before entering (Department of Health, 2010).

There are different factors which favour the entry into an assisted care centre, either a residence or a long-term centre, primarily health status and/or dependency for basic life activities, as well as the availability of a family network that makes it possible for them to live at home despite their deteriorating health.

Forty-two percent of the institutionalised population fit the majority profile: widows over the age of 80 (Table 3). Despite the fact that widowhood is the predominant marital status among men, the differences are minor: one out of every four institutionalised men is single, while one out of every three is married. Beyond their legal marital status, when they are asked about their partner, 24.5% of the men and only 0.8% of the women state that they have a partner. On the other hand, 41.8% of men and 31.6% of women state that they have no children. Likewise, 42.1% state that they did not enter because of health or autonomy problems but for other reasons (company, family reasons, to live more comfortably or economic reasons).

Therefore, it is a heterogeneous problem with profiles that reflect divergent situations and family lives, given that the family network, especially the partner and children, is one of the resources used to deal with ageing process at home in terms of both care and assistance in case of need, and of company and personal wellbeing.

Table 3. Distribution of the population living in assisted care centres by sex, age group and marital status. Catalonia 2006

The population living in assisted care centres					Each sex separately				
		< 80	80 +	Total			< 80	80 +	Total
Men	Single	3.9%	2.8%	6.7%	Men	Single	13.9%	9.8%	23.8%
	Married	3.9%	4.9%	8.9%		Married	13.9%	17.5%	31.4%
	Widower	2.3%	8.5%	10.8%		Widower	8.2%	30.1%	38.3%
	Sep/Div.	1.3%	0.5%	1.8%		Sep/Div.	4.6%	1.9%	6.6%
	Total	11.5%	16.7%	28.2%		Total	40.7%	59.3%	100.0%
Women	Single	2.3%	9.2%	11.6%	Women	Single	3.2%	12.9%	16.1%
	Married	2.8%	4.5%	7.3%		Married	3.9%	6.3%	10.2%
	Widow	8.9%	42.6%	51.5%		Widow	12.3%	59.3%	71.7%
	Sep/Div.	0.9%	0.5%	1.5%		Sep/Div.	1.3%	0.8%	2.0%
	Total	14.9%	56.9%	71.8%		Total	20.7%	79.3%	100.0%
Total		26.3%	73.7%	100.0%					

Source: Authors based on figures from the Health Survey of the Institutionalised Population (2006).

4.2.2. Different profiles of the population living in assisted care centres

As mentioned in the section on methodology, in order to define the profiles of this population we carried out a multiple correspondence analyses from which eight factors were extracted; these eight factors were then used in a cluster analysis following the hierarchical conglomerates method, which resulted in a total of seven profiles. While we considered demographic variables, family network and cohabitation prior to entry, health status, age at the time of entry and reason for entry to identify them, we also included other socioeconomic variables such as educational level, participation in the job market and income level when describing the resulting categories.

Within the hierarchical classification into seven groups, there is one variable which discriminates the most: the reason for entry. Of the five categories within this variable, there are two that are closely related, at least in terms of the residents' current situation in assisted care centres: health or autonomy problems, and proxy, which corresponds to individuals who were unable to directly answer the survey but instead had to do so via a proxy informant.[7] Of the persons interviewed with an indirect questionnaire, 95% show dementia, so it is reasonable to assume that the main reason for their entry was the degree of deterioration of their mental health, and we can consider that both categories refer to a major deterioration in their health status.

Therefore, we can see that of the seven clusters (Table 4), four of them comprise people who entered for health reasons, namely health or autonomy or

[7] Even though the proxy informant responded to a briefer questionnaire, of all the variables used in this study the only one not included in the indirect questionnaire is the main reason for entry into the centre.

proxy, while the other three contain the people who cited other reasons (company, family or other reasons such as living more comfortably, economic or other reasons).

Of the four categories of people living in assisted care centres for health reasons, one is in the majority, **group 1**, which accounts for up to 36.2% of the population living in residences and long-term centres (Table 4). Despite the fact that as the largest group, they do not have any relevant features in hardly any of the variables, we can see that this group is primarily comprised of widows with a mean age of 86.4 with no partner but with children and other family members, who lived alone in their own home before entering the centre. Most of them had participated in the job market and had medium incomes and a low educational level, similar to the overall profile of the population living in these centres. The vast majority has some dependency in BDLA's and/or a deterioration in their mental health, and their mean entry age was 83.3 years for health or autonomy reasons or proxy.

Group 2 (14.2%) is characterised by being younger and having a higher percentage of married persons or individuals with partners. It concentrates younger men with a mean age of 74.6 who had lived with their partner in their own home before entering. They have secondary or primary education and income over 600 euros per month. They show major dependency for the basic functions of everyday life, and they entered at a young age – 71.2 on average – for health or autonomy reasons or proxy. In summary, this group encompasses many institutionalised men who had health problems at younger ages which made them heavily dependent and who had to enter an assisted care centre despite having family and even a partner.

Group 3 (9.2%) is the other extreme: they are much older, with a mean age of 88.4. This group stands out for encompassing a high number of women over the age of 85, widows with children who lived with close family members in a rental house before entering the residence. They entered at advanced ages, a mean of 85.4, for health reasons, possibly mental health (100% proxy). In 98% of the cases, they are affected by dementia, and many of them are also dependent in the six BDLA functions. Therefore, these are women who aged at home with their family, but at advanced ages, despite their family network, they had to enter a centre because of deterioration in their mental health and a high degree of functional dependency.

Group 4 (18.5%) is made up of single and divorced people of both sexes and all ages who have no children or other family members. Before entering the centre, they lived in other situations, coming from social-health centres or residences, with a relative presence of individuals with dependency in the six BDLA and dementia. Therefore, this group encompasses people with health problems and no family network.

The next three groups stand out because the respondents stated that they went to live in an assisted care centres for reasons other than health problems; they account for 22% of the population living in these centres.

Group 5 (8.3%) is mostly men with no serious mental health or functional problems. This group stands out because they entered for family reasons, even though they have children and other family members with whom they lived previously. It encompasses people with opposite educational levels,

from illiterate to secondary school, along with individuals with high income levels.

Group 6 (9.8%) primarily includes single people regardless of their sex or age, who lived alone or in the house of a family member before entering the centre. They have no serious health problems; in terms of their functionality, they are independent or have some dependency in BDLA, and they have sound mental health or a slight cognitive deficit. Therefore, these are single people with no major health problems and without a close family network who stated that they went to live in the assisted care centre for company.

Finally, **group 7** (3.8%) includes widowers of any age with a high educational level and income who have a relatively sound functional and cognitive status and have a primary or secondary family network. Prior to entering, they lived with their partner and went to live at the residency between the ages of 75 and 84 in order to live more comfortably, or for economic or other reasons.

Table 4. Distribution of the variables among the seven groups identified with the cluster analysis

Group number	1	2	3	4	5	6	7	Total
Population distribution among the groups	36.2%	14.2%	9.2%	18.5%	8.3%	9.8%	3.8%	100.0%
Sex								
Men	20.3%	43.9%	16.3%	27.6%	38.2%	28.7%	50.0%	28.0%
Women	79.7%	56.1%	83.7%	72.4%	61.8%	71.3%	50.0%	72.0%
Age								
Young (<80)	5.8%	95.2%	4.9%	29.0%	27.3%	21.7%	12.0%	26.3%
Old	45.%	3.7%	27.9%	26.5%	25.5%	37.2%	44.0%	32.0%
Very old (86 +)	48.4%	1.1%	67.2%	44.5%	47.3%	41.1%	44.0%	41.7%
Mean age	86.4	74.6	88.4	83.8	84.3	84.3	84.8	84.0
Marital status								
Single	13.9%	22.3%	5.0%	27.4%	17.3%	28.7%	12.0%	18.3%
Married	20.2%	29.8%	3.3%	11.7%	10.9%	7.0%	16.0%	16.3%
Widower/widow	5.1%	42.0%	90.1%	55.2%	68.2%	58.9%	70.0%	62.2%
Separated, Divorced	0.8%	5.9%	1.7%	5.8%	3.6%	5.4%	2.0%	3.2%
Partner								
No	84.2%	75.5%	97.5%	91.4%	91.7%	95.3%	90.2%	87.5%
Yes	15.8%	24.5%	2.5%	8.6%	8.3%	4.7%	9.8%	12.5%
Children								
No	29.1%	41.7%	11.4%	44.1%	29.1%	53.8%	29.4%	34.4%
Yes	70.9%	58.3%	88.6%	55.9%	70.9%	46.2%	70.6%	65.6%
Other family members								
No	21.9%	23.4%	23.8%	33.9%	9.2%	20.2%	17.6%	23.1%
Yes	78.1%	76.6%	76.2%	66.1%	90.8%	79.8%	82.4%	76.9%

Group number	1	2	3	4	5	6	7	Total
Prior living status								
Alone	48.2%	39.9%	0.0%	18.8%	23.6%	67.4%	31.4%	36.3%
With partner, with/without close family members	26.9%	33.0%	0.0%	4.9%	23.6%	7.0%	29.4%	19.1%
With close family members, WITHOUT partner	24.8%	27.1%	100.0%	5.7%	43.6%	20.2%	19.6%	29.5%
Other situations/ Unknown	0.0%	0.0%	0.0%	70.6%	9.1%	5.4%	19.6%	15.1%
Prior home								
Own home	73.3%	68.4%	0.0%	10.7%	42.7%	59.2%	60.8%	49.9%
Rental home	9.8%	11.2%	100.0%	6.1%	31.8%	10.8%	11.8%	19.7%
Home of child or other family member	14.8%	19.8%	0.0%	3.3%	15.5%	23.1%	7.8%	12.6%
Other (social-health centre, residence or assisted flat)	2.1%	0.5%	0.0%	79.9%	10.0%	6.9%	19.6%	17.8%
BDLA dependency								
Independent	15.9%	25,0%.	9.0%	13.9%	39.1%	44.2%	43.1%	21.9%
Some dependency	68.1%	50.0%	51.6%	61.2%	60.9%	53.5%	56.9%	60.3%
Dependent in all 6 basic functions	16.1%	25.0%	39.3%	24.9%	0.0%	2.3%	0.0%	17.8%
Mental health								
Normal	9.8%	23.3%	1.0%	10.5%	14.8%	25.6%	23.5%	13.7%
Slight cognitive deficiency	19.5%	15.9%	1.0%	10.5%	27.8%	31.2%	31.4%	18.2%
Dementia	70.7%	60.8%	98.0%	79.0%	57.4%	43.2%	45.1%	68.0%
Perceived health								
Average	5.3	5.7	-	5.4	5.7	5.4	6.0	5.5
Age at entry								
< 75	2.3%	83.0%	3.3%	23.6%	24.8%	28.3%	9.8%	22.5%
75-84	63.5%	17.0%	38.5%	42.1%	35.8%	39.4%	62.7%	46.0%
85 +	34.2%	0.0%	58.2%	34.3%	39.4%	32.3%	27.5%	31.5%
Mean age at entry	83.3	71.2	85.4	80.5	81.0	80.3	82.2	80.7
Reason for entry								
Company/not being alone	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	9.8%
Family reasons	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	8.3%
Health or autonomy problems	49.6%	50.0%	0.0%	26.9%	0.0%	0.0%	0.0%	30.0%
Others	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	3.9%
Proxy	50.4%	50.0%	100.0%	73.1%	0.0%	0.0%	0.0%	48.1%
Educational level								
Cannot read or write	11.1%	13.3%	15.6%	10.9%	15.5%	8.7%	6.0%	11.7%
No education, can read and write	50.1%	44.1%	36.1%	32.8%	50.0%	54.3%	46.0%	45.0%
Primary school	21.9%	25.5%	13.9%	19.8%	27.3%	32.3%	32.0%	23.1%
Secondary school	5.0%	5.9%	3.3%	3.6%	6.4%	3.1%	6.0%	4.7%
University	2.5%	1.1%	1.6%	2.4%	0.9%	0.8%	6.0%	2.0%
Unknown/No answer	9.4%	10.1%	29.5%	30.4%	0.0%	0.8%	4.0%	13.5%

Group number	1	2	3	4	5	6	7	Total
Work								
No	19.7%	9.5%	21.4%	14.9%	11.0%	8.6%	4.2%	14.8%
Yes	80.3%	90.5%	78.6%	85.1%	89.0%	91.4%	95.8%	85.2%
Monthly income								
No income	6.2%	3.1%	5.9%	5.8%	0.0%	0.0%	5.0%	4.4%
Less than €300	6.2%	3.1%	3.9%	7.0%	7.9%	9.4%	0.0%	5.7%
From €301 to 600	66.3%	55.1%	68.6%	60.5%	60.5%	60.4%	50.0%	61.8%
From €601 to 900	13.5%	24.5%	11.8%	17.4%	7.9%	22.6%	35.0%	17.4%
More than €900	7.9%	14.2%	9.8%	9.3%	23.7%	7.6%	10.0%	10.7%

Source: authors based on figures from the Health Survey of the Institutionalised Population (2006).

5. Conclusions and discussion

Institutionalisation is still a minority form of residence among the elderly in Catalonia: in relative terms, in 2011 it affected only 4.0% of the population over the age of 64, but in absolutely terms it has undergone a major increase by more than tripling since 1981, so it now encompasses more than 51,000 people. The increase is due to both the higher survival rates at advanced ages and a considerable increase in institutionalisation in the past three decades, especially among people aged 80 and older. It is essential to measure this population and spotlight the fact that their absence in surveys addressed exclusively to residents of private households could lead to an important bias, especially in terms of the analysis of the elderly.

Even though the institutionalised population is primarily comprised of widows over the age of 80, we also noted a major presence of single persons of both sexes, primarily at younger ages, the least affected by widowhood. Bearing in mind the small proportion of these generations who never married, the prevalence of singles in the institutionalised population is quite high, especially among women, and it increases with age. This stresses the importance of the family network, given that not only do single persons have no partner, but most of them have no children either; that is, they have no close family network to assist them in case of need.

The 2011 census shows that almost 95% of the elderly who reside in collective establishments live in assisted care centres, which include both residences and hospital and long-term centres. It has become clear that despite the existence of a majority profile among the institutionalised population, it is nonetheless not a homogeneous population but instead encompasses different profiles which reflect different family situations and health statuses.

Seven profiles of institutionalised persons were identified, which were classified into two major groups: those who entered for health or autonomy reasons and those who cited other reasons. Among the former there are four profiles which reveal different previous family or cohabitation situations which led the person to enter an institution: 1) widows who lived alone and some dependency in BDLA; 2) younger people, primarily men, who have a family network but had to enter at younger ages because of serious functional dependency problems; 3) widows who aged in their own or their children's homes and entered at advanced ages with significant mental deterioration; and 4) persons with health problems without a family network, primarily single and divorced persons.

On the other hand, even though only 6.2% of the institutionalised population has no health problems – no cognitive deterioration and independence in the six BDLA – 22% of the population claims to have gone to live in an assisted care facility for other reasons. Among them are three different profiles with a relatively good functional and cognitive status: 1) people who have a family network yet have entered for family reasons; 2) people, especially single people, who do not want to be alone and are looking for company; and 3) widowers with higher educational levels and incomes who state that they entered in order to live more comfortably or for economic reasons.

Despite the elderly's explicit preference for living alone as long as they can and with children if needed, the profiles suggest a shift in mindset towards residences, as other studies have also found (Fernández Carro, 2013). Only 9.2% of the residents of assisted care centres fit the institutionalisation profile that existed in the past: as a last resort when the family could not properly tend to the elderly's care needs after they have aged in the family setting (Bazo, 1991). On the other hand, the largest group, which accounts for 36.2% of the institutionalised population, primarily encompasses widows who lived in their own home, many of them alone despite having a family network, before entering because of health or autonomy problems. Even though this survey did not ask them, it is quite possible that these women preferred to go to live in a residence instead of living in their children's homes in order not to be a burden or upset the privacy of family life (López Doblas et al., 2013). When asked, 60% of people who live in residence (in Spain) state that they themselves had taken this decision (Fernández Carro, 2013). Likewise, having a home of their own in addition to income for supporting themselves could mean the difference between being able to pay for the cost of entering a residence or having to depend on other family members. This possible incipient change can also be seen in the minority profile (3.8%) which includes widowers with a high educational level and income, and who state that they went to live in the centre for practical reasons (comfort, economic or other reasons), as well as the fact that people without a close family network, primarily single persons with relatively high functional and mental health statuses, went to live in a residence for company.

The results point to the fact that institutionalisation will most likely continue to increase in the near future, especially among the most advanced ages, since the generations that will join the population aged 65 and older will supposedly have enjoyed the best health conditions throughout their lifetimes. However, it remains to be seen whether in the current socioeconomic context of cutbacks in social welfare, which is having significant effects on both the level of material wellbeing and the provision of healthcare services, the cohorts currently at older ages and their health in old age will be affected. On the other hand, there may also be an increase in institutionalisation due to the greater willingness of the elderly with no major health problems to seek a residential option that provides them with support, comfort, services, company and the ease of mind of being near someone who can care for them in case of need or emergency.

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Appendix. Classification of collective establishments by typology and census. Censuses from 1981, 1991, 2001 and 2011

1981	1991	2001	2011
Residences			
Social assistance (homes, orphanages, social care for children, youth, adults, the disabled or socially marginalised people, etc.)	Shelters for the destitute, marginalised, etc.	Shelters for the socially marginalised	Residences for the elderly
	Homes or residences for the elderly	Homes or residences for the elderly	Institutions for persons with disabilities or institutions to provide children and youth with social assistance
	Institutions to provide social assistance	Institutions for persons with disabilities	
	Institutions for persons with disabilities	Other institutions to provide children and youth with social assistance...	
	Orphanages		
Hospital centres			
Hospital centres (hospitals, clinics, hospital-homes, establishments for the mentally ill, convalescent homes, etc.)	Long-term hospitals	Long-term hospitals	Healthcare institutions
	General hospitals	General and specialised short-term hospitals	
	Psychiatric hospitals	Psychiatric hospitals	
Religious			
Religious	Religious institutions	Religious institutions (monasteries, abbeys, etc.)	Religious institutions
Other			
Military	Military establishments	Military establishments (barracks, etc.)	Military institutions
Educational (boarding schools, military academies and schools, seminaries, etc.)	University residences	University residences, student residences	Penitentiary institutions
Other	Educational institutions	Penitentiary institutions (prisons, reformatories, etc.)	Other kinds of collective establishments
Penitentiaries	Others	Boarding schools, military academies and schools, seminaries, etc	
Non-hotel residences (university residences, student or employee residences, etc.)	Employee residences	Other kinds of groups Employee residences	
Hotels (hotels, pensions, hostels, homes, etc.)	Hotels	Hotels, pensions, hostels, etc.	